

Application Number: 09/975,707

Docket: 2000-111R1

AMENDMENTS TO THE CLAIMS

Please substitute the following pending claims 1-9 and 13-22 as replacement claims for the previously-pending claims. In this Amendment C, claims 1-5, 8, 9, 13, 17 and 20 have been amended, claims 10-12 have been canceled, and new claims 21 and 22 have been added.

1. (currently amended) An electrochemical cell apparatus, comprising:
  - a) an assembly comprising a base having a first portion, a printed circuit board supported on the base, and a second portion well plate adjoining the printed circuit board, the well plate including a plurality of through holes defining individual isolated passageways in the well plate, the well plate and the printed circuit board being assembled with a fluid tight seal to define a plurality of wells defined in said base, extending from said first portion to said second portion, for defining a plurality of electrochemical cells commonly supported by said base;
  - b) at least two electrodes sealingly disposed in each of the plurality of  
electrochemical cells;
  - c) the a printed circuit board adjoining said second portion having  
defined thereon an individually addressable electrical communication path for electrically interfacing with each of said plurality of electrochemical cells; and
  - d) circuitry for providing an electrical connection between an  
electrical source and one of said electrodes in each said cell via said printed circuit board.

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2. (currently amended) An electrochemical cell apparatus, comprising:

- a) ~~a base having a first portion and a second portion and a plurality of wells defined in said base, extending from said first portion to said second portion, for defining a plurality of electrochemical cells commonly supported by a said base;~~
- b) at least two electrodes, including a sample electrode, sealingly disposed in each of the plurality of electrochemical cells;
- c) an inert member in each of the plurality of electrochemical cells for constraining the sample electrode and allowing fluid communication between the sample electrode and an electrolyte, and
- d) ~~e)~~ a printed circuit board adjoining said second portion having defined thereon an individually addressable electrical communication path for electrically interfacing with each of said plurality of electrochemical cells; and
- d) ~~power source; and~~
- e) circuitry for providing an electrical connection between an electrical source said power source and one of said electrodes in each said cell via said printed circuit board.

3. (currently amended) An electrochemical cell apparatus, comprising:

- a) an assembly comprising a base having a first portion, a printed circuit board supported on the base, and a second portion well plate adjoining the printed circuit board, the well plate including at least eight through holes defining individual isolated passageways in the well plate, each of the at least eight through holes and at least eight wells defined in said base and having an associated first threaded portion, the well plate and the printed circuit board

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~~assembled with a fluid tight seal to define at least eight extending in an axial direction from said first portion to said second portion, for defining a plurality of electrochemical cells commonly supported by said base;~~

b) a sheath assembly having an associated second threaded portion for engaging said first threaded portion and projecting into each of said at least eight wells a first sheath and a second sheath, each having a longitudinal axis;

c) a reference electrode in said first sheath for sealing disposition in each of the at least eight electrochemical cells generally in said axial direction;

d) a counter electrode in said second sheath for sealing disposition in each of the at least eight electrochemical cells generally in said axial direction and generally parallel with said reference electrode;

e) ~~the~~ a printed circuit board ~~adjoining said second portion~~ having defined thereon an individually addressable electrical communication path, including individual traces electrically connecting with a working electrode corresponding to each of said at least eight wells ~~on~~ for electrically interfacing with each of said at least eight electrochemical cells;

f) a potentiostat/galvanostat; and

g) circuitry for providing an electrical connection between said potentiostat/galvanostat and one of said electrodes in each said cell via said printed circuit board.

4. (currently amended) The apparatus of claims 1 or 2, further comprising said electrical source and wherein said electrical source is a multi-channel potentiostat/galvanostat.

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5. (currently amended) The apparatus of claims 1 or 2, wherein said electrodes include a working electrode and a counter electrode.

6. (original) The apparatus of claim 5, further comprising a reference electrode.

7. (original) The apparatus of claim 1, wherein said individually addressable electrical communication path includes a substantially circular metal conductor.

8. (currently amended) The apparatus of claim 1 2, wherein said printed circuit board is separately fabricated from said base.

9. (currently amended) The apparatus of claim 1 2, wherein a threaded assembly is employed for projecting disposition of electrodes into said well.

10.-12. (canceled).

13. (currently amended) The apparatus of claims 1 or 2 ~~12~~, wherein the printed circuit board is a first printed circuit board, the apparatus further comprising a second printed circuit board for contacting at least one of said electrodes in each of the plurality of electrochemical cells.

14. (original) The apparatus of claim 3, wherein said potentiostat/galvanostat is a multi-channel potentiostat/galvanostat.

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15. (original) The apparatus of claim 3, wherein said traces originate at a multi-pin connector on said printed circuit board.

16. (original) The apparatus of claim 3, wherein said longitudinal axes of each of said sheaths are generally parallel to each other.

17. (currently amended) The apparatus of claim ~~3~~ 15, wherein said circuitry connects to said multi-pin connector with a ribbon cable.

18. (original) The apparatus of claim 3, wherein said individually addressable electrical communication path includes a substantially circular metal conductor.

19. (original) The apparatus of claim 3, further comprising a second printed circuit board for contacting at least one of said electrodes.

20. (currently amended) The apparatus of claim 13 ~~18~~, wherein said first printed circuit boards and said second printed circuit board are disposed in generally opposing relation to each other.

21. (new) An electrochemical cell apparatus, comprising:

- a) an assembly comprising a base, a first printed circuit board supported on the base, and a well plate adjoining the first printed circuit board, the well plate including a plurality of through holes defining individual isolated passageways in the well plate, the well plate and the first printed circuit board being assembled with a fluid tight seal to define a plurality of electrochemical cells commonly supported by said base;
- b) a first electrode sealingly disposed in each of the plurality of electrochemical cells, the first electrode being supported by the first printed circuit board, the first printed circuit board having defined thereon an individually addressable electrical communication path for electrically interfacing with the first electrode, and
- c) a second electrode sealingly disposed in each of the plurality of electrochemical cells, the second electrode being supported by a common carrier assembly having a sheath assembly, the sheath assembly allowing the second electrode to be projected into each of the plurality of electrochemical cells.

22. (new) The apparatus of claim 21 further comprising a second printed circuit board supported by the common carrier assembly, the second printed circuit board having defined thereon an individually addressable electrical communication path for electrically interfacing with the second electrode.

[NO FURTHER AMENDMENTS THIS PAGE]